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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,602

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EXAMINER

DANIELSEN, NATHAN ANDREW

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/532,602	<b>Applicant(s)</b> SAKAMOTO ET AL.	
	<b>Examiner</b> Nathan Danielsen	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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**DETAILED ACTION**

1. Claims 1-25 are pending.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

3. The references cited in the Search Report issued by the Japanese Patent Office on 21 December 2004 in parent application PCT/JP04/11729 have been considered, but will not be listed on any patent resulting from this application because they were not provided on a separate list in compliance with 37 CFR 1.98(a)(1). In order to have the references printed on such resulting patent, a separate listing, preferably on a PTO/SB/08A and 08B form, must be filed within the set period for reply to this Office action.
4. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. See page 2 of the instant application's specification for this list.

***Specification***

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

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***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Regarding claims 1, 2, 10, 11, 13, 23, and 24, each claim refers back to a preceding limitation by using the word "it", which renders each claim indefinite because the word "it" is an imprecise and ambiguous term in that it is unclear exactly what limitation "it" refers back to.
- b. Regarding claims 2, 6-9, 11, 14, 19-22, and 24, it is unclear, due to the placement of the at least one period found within each of the claims, where each claim end. If the first or only period in each claim is to be interpreted to be the termination point of each claim, the limitations "the following Math-1 or Math-2", "the following Math-3 or Math-4", and "the following relational expression" are rendered indefinite because the claim fail to define each "Math-x" or "relational expression". See MPEP § 608.01(m) and *Fressola v. Manbeck*, 36 USPQ2d 1211 (D.D.C. 1995). Additionally, the limitations "the following Math-1 or Math-2", "the following Math-3 or Math-4", and "the following relational expression" would then also lack proper antecedent basis within the claims. Appropriate correction, as explained in MPEP § 608.01(m) is required. For purposes of examination, each of these claims is interpreted to have a single period therein, located at the very end of the claim.
- c. The term "practically" in claim 2 is a relative term which renders the claim indefinite. The term "practically" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Specifically, the term "practically" renders the claim indefinite because the term *alone* is not specifically defined. However, Applicant has defined the phrase "the position in the optical axis

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direction is not relatively and practically changed to the light source" to mean that "the distance in the optical axis direction to the light source is almost constant in the range of change of the environmental temperature" (see page 10 the instant application's specification). For purposes of examination, this is the definition the examiner has applied.

- d. Regarding claim 23, it is rejected as being indefinite because the limitations "the information recording surface" and "the optical information recording medium" lack antecedent basis in the claims.
- e. Claims 3-5, 10, 12, 13, 15-18, and 25 are rejected as being dependent on an indefinite claim.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 16, 18, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al (US Patent Application Publication 202/0166952; hereinafter Tanaka).

Regarding claim 1, Tanaka discloses a light source apparatus comprising:

a light source by which a light flux whose emitting angle is different in a horizontal direction and in

a vertical direction is projected (element 1 in figures 1, 6, and 7 and ¶ 92), and

a beam shaping element, for converting the light flux into a light flux whose emitting angle is

almost equal and projecting, of a single lens formed of plastic (element 2 in figures 1, 6,

and 7 and ¶s 91 and 92) in which a linear expansion coefficient  $\alpha_n$  satisfies the following

expression (1) (¶ 92):

$$5.0 \times 10^{-5} < \alpha_n < 8.0 \times 10^{-5} \quad (1),$$

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and a part of the beam shaping element is fixed and arranged to the light source, so that an astigmatism generated following the refractive index change of the beam shaping element generated by the temperature change is suppressed by an interval change, which is generated by the linear expansion of the beam shaping element, between the light source and the incident surface of the beam shaping element (§ 92).

Regarding claim 2, Tanaka discloses everything claimed, as applied to claim 1. Additionally, Tanaka discloses where, in the beam shaping element, an outgoing surface is fixed so that it is not practically changed in the optical axis direction to the light source (§ 92; where the 8.8  $\mu\text{m}$  expansion of the beam shaper and the resin lens barrel is not a practical change with respect to the 3.6 mm between the beam shaper and the laser source).

Regarding claims 3 and 16, Tanaka discloses everything claimed, as applied to claims 2 and 1, respectively. Additionally, Tanaka discloses where the beam shaping element is structured so that the astigmatism generated by the temperature change is suppressed by using the astigmatism generated following the shape change due to the temperature change of the beam shaping element (§ 92).

Regarding claim 18, Tanaka discloses everything claimed, as applied to claim 1. Additionally, Tanaka discloses where, in the beam shaping element, a cross sectional shape in the horizontal direction or in the vertical direction of the at least one optical surface of the incident surface and the outgoing surface is non-circular arc (§s 32 and 92).

Regarding claim 23, Tanaka discloses an optical pick-up apparatus (figure 8) comprising:

the light source apparatus written in claim 1 (see claim 1); and

a light converging element for converging the light flux on the information recording surface of the optical information recording medium (element 3 in figures 1, 6, and 8),

wherein the reproducing and/or recording of the information is conducted on the optical

information recording medium (§ 181).

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***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 4, 5, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka, in view of Katsura et al (US Patent 5,420,952; hereinafter Katsura).

Regarding claims 4 and 17, Tanaka discloses everything claimed, as applied to claims 3 and 1, respectively. However, Tanaka fails to disclose where a fixing member for fixing the beam shaping element outgoing surface is formed of a material whose linear expansion coefficient satisfies

$$1.0 \times 10^{-5} < \alpha_n < 3.0 \times 10^{-5}.$$

In the same field of endeavor, Katsura discloses where a fixing member for fixing the beam shaping element outgoing surface is formed of a material whose linear expansion coefficient satisfies  $1.0 \times 10^{-5} < \alpha_n < 3.0 \times 10^{-5}$  (col. 3, lines 14-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of Tanaka with that of Katsura, for the purpose of reducing the effects of stress on an optical element when subjected to temperatures different from that at which the adhesive is applied (col. 1, lines 59-65).

Regarding claim 5, Tanaka, in view of Katsura, discloses everything claimed, as applied to claim 4. Additionally, Tanaka discloses where, in the beam shaping element, a cross sectional shape in the horizontal direction or in the vertical direction of the at least one optical surface of the incident surface and the outgoing surface is non-circular arc (¶s 32 and 92).

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***Allowable Subject Matter***

12. Claims 6-15, 19-22, 24, and 25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, including those references cited in the abovementioned Search Report and subsequently considered by the examiner, fail to teach or fairly suggest:

In claims 6, 8, 19, and 20: where the specific surface shape of the beam shaping element satisfies one of Math-1 or Math-2; and

In claim 24: where the divergent angle converting element is structured to satisfy  $3.5 > (L/S) \times f_c > 1.0$ .

***Closing Remarks/Comments***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Danielsen whose telephone number is (571)272-4248. The examiner can normally be reached on Monday-Friday, 9:00 AM - 5:00 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Supervisory Patent Examiner, Art Unit  
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Nathan Danielsen  
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